



**LEGEND**  
 THE INFORMATION DEPICTED ON THIS MAP REPRESENTS THE RESULTS OF SURVEYS MADE ON THE DATES INDICATED AND CAN ONLY BE CONSIDERED AS INDICATING THE GENERAL CONDITIONS AT THE TIME.

**LOW WATER DATUM**  
 ELEVATIONS AND PROJECT DEPTHS ARE REFERRED TO INTERNATIONAL GREAT LAKES DATUM. (1985)

**GRID COORDINATES**  
 GRIDS SHOWN ARE BASED ON NATIONAL GEODETIC SURVEY PROJECTION TABLES. STATE OF MICHIGAN, SOUTH ZONE (2113). LAMBERT PROJECTION, 1983 NORTH AMERICAN DATUM.

ALL COORDINATES ARE IN U.S. SURVEY FEET.

**DIRECTIONS**  
 ALL DIRECTIONS ARE GRID AZIMUTHS REFERRED TO NORTH ZERO.

PROJECT DEPTHS ARE AS SHOWN ON DRAWING. ALL DEPTHS ARE IN U.S. SURVEY FEET.

THE AUTOMATED ELECTRONIC SURVEY WAS CONDUCTED BY ROBERT W. POLAK AND JOSEPH D. PERCELL, ABOARD THE USACE SURVEY VESSEL "WHEELER".

**AUTOMATED EQUIPMENT USED**  
 POSITIONING: TSS POS-HW  
 SOFTWARE: HYPACK HYSWEEP  
 SONIC SOUNDERS: RESON SEABAT 8125

- NOTES:**
- GAGES USED WERE OBTAINED ELECTRONICALLY FROM THE NOAA GAGE AT WYANDOTTE, MI. (9044030), VIA THE INTERNET.
  - POSITIONS WERE DETERMINED BY GPS REFERENCE BEACON 838, LOCATED AT FORT WAYNE DETROIT, MICHIGAN - FREQUENCY 319 KHZ, 200 BPS
  - DEPTH MEASURED USING SEABAT 8125 ULTRA HIGH RESOLUTION FOCUSED MULTIBEAM ECHOSOUNDER SYSTEM AND ODOM DIGIBAR PRO DB1200 VELOCITY PROFILER.
  - EDITED MULTIBEAM SOUNDINGS WERE SORTED INTO A 37 FT. BY 15 FT. MATRIX. THE LARGEST STRIKE LOCATED IN EACH CELL WAS THEN SELECTED FOR PLOTTING AT THE CELL CENTER.



NO.	DATE	REVISION	BY
<b>U.S. ARMY ENGINEER DISTRICT, DETROIT</b> CORPS OF ENGINEERS DETROIT, MICHIGAN			
DESIGNED BY:	DETROIT AREA OFFICE		09 NOVEMBER 2009
DRAWN BY:	<b>DETROIT RIVER, MICHIGAN</b> BALLARD'S REEF CHANNEL CS 560+00 TO CS 591+00 MULTI-BEAM SWEEP SURVEY STRIKE PLOT		
CHECKED BY:	R.W.P.		
REVIEWED BY:			
SUBMITTED BY:	P.E.	APPROVAL RECOMMENDED:	P.E. DATE
CHIEF - PROJ. OPNS. SEC.	CHIEF - OPERATIONS MAINT. BRANCH		
APPROVED:	SCALE AS SHOWN		DRAWING NUMBER
CHIEF - CONSTRUCTION - OPERATIONS DIVISION	SHEET 5 OF 6		br5s1109.dgn